PFT Interpretation

Date: Thursday, 18 March 2010
Time: 13:00 – 16:00
Place: Al Mas Hall # 2

Preamble:

- Attendance is limited to 30 attendees.
- Pre-registration is required on first come first served bases. Deadline: 28 February 2010
- Registration fee = $100. (*Separate from the main meeting registration*)
- Workshop is approved for CMEs by SCHS.

Target Audience:

Physicians, Residents, Respiratory Therapist, Medical Technologists and/ or Health Care Professionals performing Pulmonary Function Testing.

Description:

Pulmonary function testing is an important (and often underused) method of identifying pulmonary disease commonly encountered in both the hospital and clinic settings. This three hours workshop conducted by a number of the renowned experts in Pulmonary Function Testing. The workshop includes an overview of technical aspects of Pulmonary Function Testing, methodology, with subsequent interpretation case scenarios.

Learning Objectives:

The learners can develop the knowledge and skills necessary to perform basic office spirometry, while understanding the broader indications for full pulmonary function testing and methods of interpretation.
By the close of the workshop, each participant would be able to comprehend the indications for various PFT components, as well as identify common pulmonary and thoracic disorders and apply this information to patient care.

Lecture 1: Physiological Principles of PFT

Identify the components of PFTs, physiological bases and determinant of each component and describe the indications for their use.

- Vital Capacity (VC).
- Forced Vital Capacity (FVC).
- Forced Expiratory Volume in one second (FEV_1).
- FEV_1/FVC %.
- Forced Expiratory Flow over 25-75% of FVC ($FEF_{25-75\%}$).
- Total lung capacity (TLC).
- Functional residual capacity.
- Residual volume.
- Diffusion capacity.

Lecture 2: Basic Spirometry: Pulmonary Function Testing Equipment

1. Describe the pulmonary function equipment used for common testing applications:
   a. Spirometry.
   b. Peak flow meters.
   c. Pulmonary gas analyzers.
   d. Body plethysmographs.
2. Describe the function of portable Spirometry and the National Lung Health Education Program (NLHEP) recommendations for office spirometry.
3. Describe acceptable calibration of a Spirometry.
4. List the minimal requirements of an acceptable Spirometry for diagnostic testing.
5. Describe the methods of infection control and safety.

Lecture 3: Pediatric Pulmonary Function Testing

1. State differences in procedures and techniques between pulmonary function testing in infants as compared with older children.
2. State how the American Thoracic Society (ATS) guidelines related to pulmonary function testing in children and resultant interpretive strategies.
3. Suggest techniques for approaching young children and medications to testing protocols for standard PFTs.
4. Relate specific pediatric disease states to anticipated changes in standard pulmonary function measurements.

Lecture 4: Interpretation of Pulmonary Function Tests "Case Scenarios"

1. This includes various examples of different PFT abnormality patterns presented in interactive way.
2. Specify the indications for pulmonary function testing.
3. Determine whether spirometry is acceptable and reproducible.
4. Differentiate between obstruction and restriction as causes of PFT abnormalities.
5. Distinguish between large and small airway obstruction by evaluating flow-volume curves.
6. Determine whether there is a significant response to bronchodilators
7. Describe lung volumes measurement.
8. Identify restriction from measured lung volumes.
9. Identify air trapping and hyperinflation using measured lung volumes.

Program:

Time	Topic	Speaker
13:00 – 13:30	Physiological Principles of PFT	Vlasis Polychronopolous (Greece)
13:30 – 14:00	Basic Spirometry: Pulmonary Function Testing Equipment	Adil Al Otaibi (KSA)
14:00 – 14:30	Pediatric Pulmonary Function Testing	Hammad AL Sadoon (KSA)
14:30 – 15:00	Interpretation of Pulmonary Function Tests "Case Scenarios"	Hamdan AL Jahdali (KSA)
15:00 – 16:00	Demonstration on Spirometry Maneuvers	Adil Al Otaibi (KSA) Tina Mendoza (UAE)

References:

1. Aboussouan LS, Stoller JK: Flow volume loops. UpToDate, 2006.
2. Bahhady IJ, Unterborn J: Pulmonary function tests: an update. Consultant.2003.
3. Barreiro, TJ, Perillo I: An approach to interpreting spirometry. Am Fam Physician. 2004 Mar 1;69(5):1107-14.
4. Enright PL: Diffusing capacity for carbon monoxide. UpToDate, 2007.
5. Enright PL: Overview of pulmonary function testing in adults. UpToDate, 2007.
6. West JB. Respiratory Physiology: The Essentials. Lippincot Williams & Wilkins, 2000.